

## REMARKS

Favorable reconsideration and allowance of this application are requested.

### **1. Discussion of Claim Amendments**

By way of the amendment instructions above, claim 1 has been clarified to emphasize that the elastomer component *consists of* monomer units of ethylene, an  $\alpha$ -olefin and optionally one or more non-conjugated polyenes. Thus, the definition of the elastomer in claim 1 specifically *excludes* styrenic elastomers.

Claim 1 has also been clarified to define that the composition has a hardness of below 35 shore A as supported by page 4, lines 10-12. Other changes of an editorial nature have also been proposed for claim 1 for purpose of clarity.

Claims 14-18 are new and directly or indirectly depend from claim 1. In this regard, claim 14 defines the  $\alpha$ -olefin monomer as described on page 3, lines 14-15. Claims 15-16 define preferred oil/elastomer ratios as supported by page 3, line 3 through page 4, line 1 while claims 17-18 preferred hardness values of the composition as supported by page 4, lines 10-12.

Claim 11 has been cancelled as redundant in view of the amendments to claim 1.

Therefore, upon entry of this amendment claims 1-10 and 12-18 will remain pending herein for consideration for which favorable action is solicited.

### **2. The Present Invention**

The present invention is novel in several respects. For example, the present invention embraces thermoplastic elastomer compositions having low hardness without necessarily incorporating therein any styrenic block copolymers. In this regard, the examples in the subject application make it clear that the formulations of the present

invention may achieve a low hardness (i.e., less than 35 shore A) at relatively high oil loadings (i.e., greater than 2/1 oil/elastomer). Even with such low hardness and high oil, the compositions of the present invention exhibit less stickiness and less tackiness. This aspect of the present invention was in fact surprising.

### 3. Response to Art-Based Rejections

#### A. Rejection of Claims 1-13 Based on Ouhadi

Ouhadi (EP 757077) discloses compositions that are fundamentally different from those claimed herein in terms of the oil/elastomer ratio and in terms of the composition hardness.

In this regard, Ouhadi discloses compositions having polypropylene, ethylene-propylene-diene-monomer (EPDM) elastomer and a styrene-butadiene rubber (SBR). The oil/EPDM ratio disclosed is 2.11, but the oil to *total* elastomer ratio (i.e., the EPDM plus SBR) is 1.58 which is outside the range claimed herein.<sup>1</sup>

In addition, the Ouhadi compositions have a shore A hardness of 41 (see Table 3, run 6).

Therefore, Ouhadi cannot anticipate the presently claimed invention for the reasons noted above. And, Ouhadi specifically teaches away from the relatively high oil and low hardness compositions as claimed in the present application which do not include any styrenic elastomer therein.

As such, withdrawal of the rejection advanced against claims 1-13 under 35 USC §103(a) based on Ouhadi is in order.

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<sup>1</sup> In this regard, the total elastomer comprises 22.18 wt.% EPDM (i.e., 38.85wt% without the 42.9% oil) and 7.40 wt.% SBR 1500

**B. Rejection of Claims 1-11 Based on Dozeman**

Dozeman (USP 6,750,292) teaches foamed thermoplastic vulcanizates (TPVs) wherein the hardness of the base TPV is not explicitly disclosed. The compositions from the examples, and the preferred ranges mentioned in Dozeman however indicate that the base TPVs would have a hardness of above 35 shore A. Thus, for example, at column 4, lines 1-5, a TPV is disclosed having 60 parts polypropylene, and an oil/EPDM ratio 1.4. Thus, Dozeman would neither anticipate nor render obvious the present invention for such reasons.

**C. Rejection of Claims 1 and 13 Based on Dozeman et al in view of Ouhadi**

The comments in Sections 3.A and 3.B are equally germane to the *unobviousness* of claims 1 and 13 based on the combination of Dozeman et al and Ouhadi. Thus, even if such publications were combined, the present invention as defined in the pending claims would not result. As such, withdrawal of the rejection advanced under 35 USC §103(a) against claims 1 and 13 based on Dozeman et al in view of Ouhadi is in order.

**D. Rejection of Claims 1-11 and 13 Based on Hamanka et al**

Hamanka et al (USP 5,187,224) discloses modifications of SEBS compounds to improve stickiness and oil blooming issues by the addition of peroxide curable rubbers (oil extended olefinic copolymer rubber) such as EPDM and EPM, antistatic agent and lubricants. Hamanka et al involves first mixing and curing of the peroxide curable rubber and polyolefin (perhaps even the oil as well) in the presence of peroxide, then blending the resulting partially cured TPV with styrenic block copolymers such as SEBS, oil and other ingredients.

As noted previously, it is known in the art that styrenic block copolymer (SBC) based compounds have issues related to pellet stickiness and tackiness. Thus

Hamanka et al is attempting to solve this problem by the modification of SBC compounds by the addition of TPV type of ingredients resulting in a compositional pellets that are less sticky. Prior to the present invention, the only known way to produce low hardness TPE was to use styrenic block copolymers. In this regard, it is well known that SEBS and SBC have the ability to absorb relatively large amounts of oil which in turns allows the compositions in which they are present to exhibit lower hardness. However, the disadvantage of such compositions is that such SBC-containing compositions also exhibit pellet stickiness and oil blooming.

In contrast, as noted previously, the present invention embraces thermoplastic elastomer compositions having low hardness without necessarily incorporating therein any styrenic block copolymers. The present invention achieves TPVs having a relatively low hardness (i.e., less than 35 shore A) at relatively high oil loadings (i.e., greater than 2/1 oil/elastomer) in the absence of a styrenic copolymer (i.e., since the elastomer consists of monomer units of ethylene, an  $\alpha$ -olefin and optionally one or more non-conjugated polyenes).

Therefore, withdrawal of the rejection advanced against claims 1-11 and 13 based on Hamanka et al under 35 USC §§102(b) or 103(a) is in order.

#### **4. Response to Double Patenting Rejection**

The asserted obviousness-type double patenting rejection based on copending USSN 10/501,902 has been noted. However, applicants request that this rejection be held in abeyance pending final resolution of the claims pending in each application.

#### **5. Fee Authorization**

The Commissioner is hereby authorized to charge any deficiency, or credit any overpayment, in the fee(s) filed, or asserted to be filed, or which should have been filed

**WANG et al**  
**Serial No. 10/566,280**  
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herewith (or with any paper hereafter filed in this application by this firm) to our Account No. 14-1140.

Respectfully submitted,

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